

REMARKS

The Office Action mailed September 23, 2005 has been reviewed and carefully considered. Claims 1, 5, 9, 11, 13, 15 and 17 have been amended and claims 2, 6, 10, 12, 14 and 16 have been canceled. Claims 1, 3-5, 7-9, 11, 13, 15 and 17 are pending. Reconsideration of the claims in view of the remarks provided herein below and withdrawal of the present rejections are respectfully requested.

In paragraph 2 on page 2 of the Office Action, claims 13-15 were objected to because of certain informalities.

Applicants respectfully traverse the objection, but in the interest of expediting prosecution have amended the claims as suggested.

In paragraph 4 on page 2 of the Office Action, claims 1-3, 5-7 and 11-17 were rejected under § 102(e) as being anticipated by Gill.

In paragraph 6 on page 3 of the Office Action, claims 4 and 9-10 were rejected under § 103(a) as being unpatentable over Gill in view of Matsutera et al.

Applicants respectfully traverse the rejection, but in the interest of expediting prosecution have amended the claims to more particularly distinguish the claims over the cited references.

Gill discloses using either a trilayer structure for the free layer that includes a layer of NiFe or a bilayer structure for the free layer that does not include a layer of NiFe.

In contrast, the claims, as amended, recite a bilayer structure that includes a first layer of CoFe and a second layer of NiFe.

Accordingly, the claims, as amended, are patentable over Gill.

Still further, however, Gill discloses that it is undesirable to increase the ratio of the thickness of the Co or CoFe layer to the thickness of a NiFe layer because the responsiveness of the free layer decreases. Thus, Gill teaches away from the amended claims.

Accordingly, the claims, as amended, are patentable over Gill.

Still further, Gill discloses that the composition of each of the layers provided in a trilayer structure for the free layer that includes Co or CoFe, NiFe and CoNb or CoNbHf or the composition of each of the layers provided in a bilayer structure for the free layer that includes Co or CoFe and CoNb or CoNbHf, without NiFe, may be adjusted to provide reduce the positive magnetostriction of the free layer.

However, the claims, as amended, provide a bilayer, composite free layer that includes a first free layer of CoFe and a second free layer of NiFe wherein a predetermined thickness ratio of the first free layer of CoFe to second layer of NiFe is selected to provide a predetermined magnetostriction without changing the composition of the first or second free layer. Thus, Gill teaches away from the present claims.

Accordingly, the claims, as amended, are patentable over Gill.

Matsutera et al. fail to overcome the deficiencies of Gill. Matsutera et al. merely disclose the use of an insulation layer for a separation layer. Accordingly, Matsutera et al. and Gill, alone or in combination, fail to disclose, teach or suggest each of the limitations as described above with reference to Gill alone.

Accordingly, the claims, as amended, are patentable over Gill and Matsutera et al.

On the basis of the above amendments and remarks, it is respectfully submitted that the claims are in immediate condition for allowance. Accordingly, reconsideration of this application and its allowance are requested.

If a telephone conference would be helpful in resolving any issues concerning this communication, please contact Attorney for Applicant, David W. Lynch, at 423-757-0264.

Respectfully submitted,

Chambliss, Bahner and Stophel
1000 Tallan Building
Two Union Square
Chattanooga, TN 37402
423-757-0264

By: 

Name: David W. Lynch

Reg. No.: 36,204